Operating Manual:

Mobile speciality pump WOODY

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1 General Information

Dear Customer,
Thank you for your decision to purchase and install this top quality product. Please follow these operating instructions, especially those concerning safety: They are there for your safety, will save you trouble and guard from loss of guarantee.

One important point first:
If the failure of this submersible pump (power failure, technical defect) can lead to major material or non-material damage, you may have to take precautions by installing a second pump with dual pump control, alarm systems (independent of the mains), emergency generators and other equipment. For information please contact our customer service department.

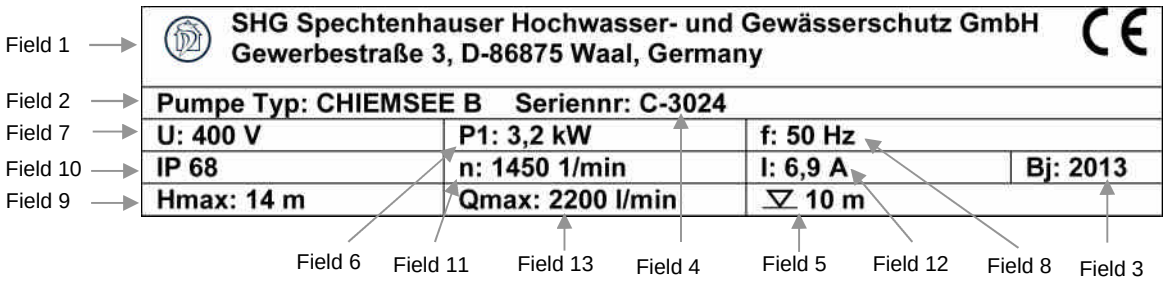
1.1 Versions

The following versions of WOODY pumps are available:

- WOODY: Pump including carrying frame, CEE motor protection plug with phase converter, 20 m H07BQ-F cable, B-Storz coupling on inlet and outlet side, intake nozzle made of PE with B-Storz coupling and flat intake nozzle made of PE with B-Storz coupling
- WOODY H: Like standard WOODY, additionally suitable for hot liquids up to a maximum temperature of 90°C, with high-temperature mechanical seals, high-temperature bearings, heat-resistant motor windings up to a maximum temperature of 170°C, B-Storz couplings suitable for liquids up to 90°C, intake and flat intake nozzle made of stainless steel
- WOODY EX: Like standard WOODY, additionally explosion-proof (explosion protection class: II2G Ex d IIB T4), applicable in EX-zones 1 and 2 and for fluids with an ignition temperature of more than 135°C (temperature class T4)

1.2 Marking of the pumps

Each WOODY pump is marked by a nameplate.
The nameplate of WOODY and WOODY H gives information about:



Field 1: Manufacturer
Field 2: Type designation
Field 3: Year of manufacture
Field 4: Serial number
Field 5: Max immersion depth
Field 6: Electrical input
Field 7: Operating voltage
Field 8: Frequency
Field 9: Max. delivery height
Field 10: Protection class
Field 11: Nominal rotation speed
Field 12: Rated current consumption
Field 13: Max. delivery rate

The nameplate of WOODY EX gives information about:

Field 1: Manufacturer
Field 2: Type designation
Field 3: Serial number
Field 4: Year of manufacture
Field 5: Electrical input
Field 6: Operating voltage/frequency
Field 7: Nominal rotation speed
Field 8: Certificate identification number
Field 9: Ambient temperature
Field 10: Protection class
Field 11: Ex-marking
Field 12: Max. delivery height
Field 13: Rated current consumption
Field 14: Max. delivery rate
Field 15: Max immersion depth

1.3 Application

The submersible pump WOODY is designed for strongly soiled waste water or sewage including solids or long fibres in case of flood control, flooding, pipe bursts or water level reduction. It is blockage-free for solids up to 70 mm in size. The pumps are designed for mobile use. For permanent fixed installation the use of sewage pumps made of cast iron is recommended. Only the explosion-proof version WOODY EX can be used in explosive zones (see section 4.10).

2 Safety instructions

(General safety instructions as per VDMA 24292)
This operation manual gives basic instructions that should be followed carefully during installation, operation and maintenance. It is essential that this manual is carefully read by the responsible personnel/operator before assembly and commissioning. It is always to be kept available at the installation/usage site of the pump.

2.1 Markings and symbols in this operating instructions

Safety instructions given in the operating manual, the non-observance of which could cause danger to life have been specifically highlighted with the general danger symbol.

The presence of dangerous voltage is identified with the safety symbol.

Other safety points in these instructions, the non-observance of which may endanger machinery or its operation, are marked as follows.

Symbols directly on the pump itself, e.g.

- Direction of rotation
- Type plate

must be carefully observed and must be maintained in legible condition.

2.2 Qualifications of personnel

An authorized (certified) electrician and mechanic shall carry out all work. Scope of responsibility and supervision of the personnel must be exactly defined by the operator. If the staff does not have the necessary knowledge, they must be trained and instructed, which may be performed by the manufacturer or supplier on behalf of the operator, moreover, the operator is to make sure that the contents of the operating manual are fully understood by the personnel.

Minimum requirements for the operating personnel:

- Legal age
- Firefigher training in accordance with the fire service regulation 2 and additional instruction of the trained machinist or "Technical Assistance" course in accordance with fire service regulation 2 or
- basic training Level I (German THW) as a rescue worker

Minimum requirements for the maintenance and inspection personnel:

- Legal age
- Qualified electrician

2.3 Hazards in the event of non-compliance with the safety instructions

Non-compliance with the safety instructions may produce a risk to the personnel as well as to the environment and the machine and results in a loss of any right to claim damages or compensation. For example, non-compliance may involve the following hazards:

- Failure of important functions of the pump
- Failure of specified procedures of maintenance and repair
- Exposure of people to electrical, mechanical and chemical hazards
- Endangering the environment owing to hazardous substances being released

2.4 Safety regulations for owner/operator

All safety instructions contained in this manual, all relevant national and local health and safety codes and any other service and safety instructions issued by the owner shall be complied with.

2.5 Safety instructions relevant for operation

Always follow these safety instructions before using the pump:

Danger from electric shock:

- Protect plug-and-socket connections against moisture and increasing water levels in flood areas.
- When using the pump in swimming pools or ponds and the surrounding area DIN/VDE 0100 must be complied with.
- Hazards resulting from electricity are to be prevented (see for example, the national-specifications or the regulations of your local electricity supply company)

General danger

- In dry-well installation (suction mode) the motor housing heats up after a lengthy operating period. You must therefore only use the hinged handles provided on the pump transport cage to transport the pump and avoid direct contact with the motor housing. Always wear protective gloves too.
- When pumping hot fluids the pump always becomes as hot as the pumped fluid. In this case you must only touch the pump if you are wearing suitable protective gloves.
- In pumping mode strong suction is produced at the intake area of the pump. It is therefore necessary to ensure that while the pump is running you never allow your hands, feet, loose clothing (e.g. ties) or jewellery (e.g. chains) to get into the area of the pump intake (suction side) or pump discharge (pressure side). There is risk of shearing injuries or getting tangled.
- The protection against contact (intake ports) for moving parts (impeller) may not be removed if the machines are in operation. The pump itself may not be operated without the appropriate protection against contact.
- Any leakage of hazardous (e.g. explosive, toxic, hot) fluids (e.g. from the shaft seal) must be drained away so as to prevent any risk to persons or the environment. Statutory regulations are to be complied with.

Damage of the pump due to inappropriate use:

- Store the pump in dry rooms only. If kept dry and clean the pump can be stored down to a minimum temperature of –20°C. Highly supercooled pumps must be allowed to thaw to above 0 °C before being used, to prevent the formation of ice on immersion in the fluid to be pumped.
- Ensure that the place in which the pump is used is protected against frost.
- Always use the carry handles provided or the trolley available as an accessory to transport the pump.
- Only use the lug provided at the pump's centre of gravity to lower the pump using ropes. Never lower the pump by its power cable or a hose connected to the pump.

2.6 Safety instructions relevant for maintenance, inspection and assembly work

It shall be the user's responsibility to ensure that all maintenance, inspection and assembly work is performed by authorized and qualified personnel who have adequately familiarized themselves with the subject matter by studying this manual in detail.
Any work on the machine shall only be performed when it is at stand-still, it is being imperative that the procedure for shutting down the machine described in this manual be followed. Pumps and pump units which convey hazardous media must be decontaminated. All waste emissions such as used oil must be appropriately disposed of, oil spills must be cleaned up and emissions to the environment must be reported.
On completion of work all safety and protective facilities must be reinstalled and made operative again. Before restarting the points listed in section 4 Operating the Pump, must be noted and followed.

2.7 Unauthorized modifications and manufacturing of spare parts

Any modification may be made to the pump only after consultation with the manufacturer. Using spare parts and accessories authorised by the manufacturer is in interest of safety. Use of other parts may exempt the manufacturer from any warranty or compensation claims.

2.8 Unauthorised modes of operation

The reliability of the pump delivered will be only guaranteed if it is used in the manner intended, in accordance with this manual. The limit values specified in the data sheet must under no circumstances be exceeded. These installation and operation instructions do not supersede or exclude generally valid regulation and standards.

3 Technical data

3.1 Equipment and weight

Type	WOODY A	WOODY B	
Inlet:	A-Storz	B-Storz	
Outlet:	A-Storz	B-Storz	
Max. solid passage:	80 mm	70 mm	
Max. liquid temperature:	0° - 60 °C submersed 0° - 40 °C in suction operation		WOODY H: 0-90 °C
Weight:	53 kg		
Length of cable:	20 m		
Cable type:	H07BQ-F		WOODY EX: NSSHÖU-J
Sound emission in 1 m	< 70 dB(A)		

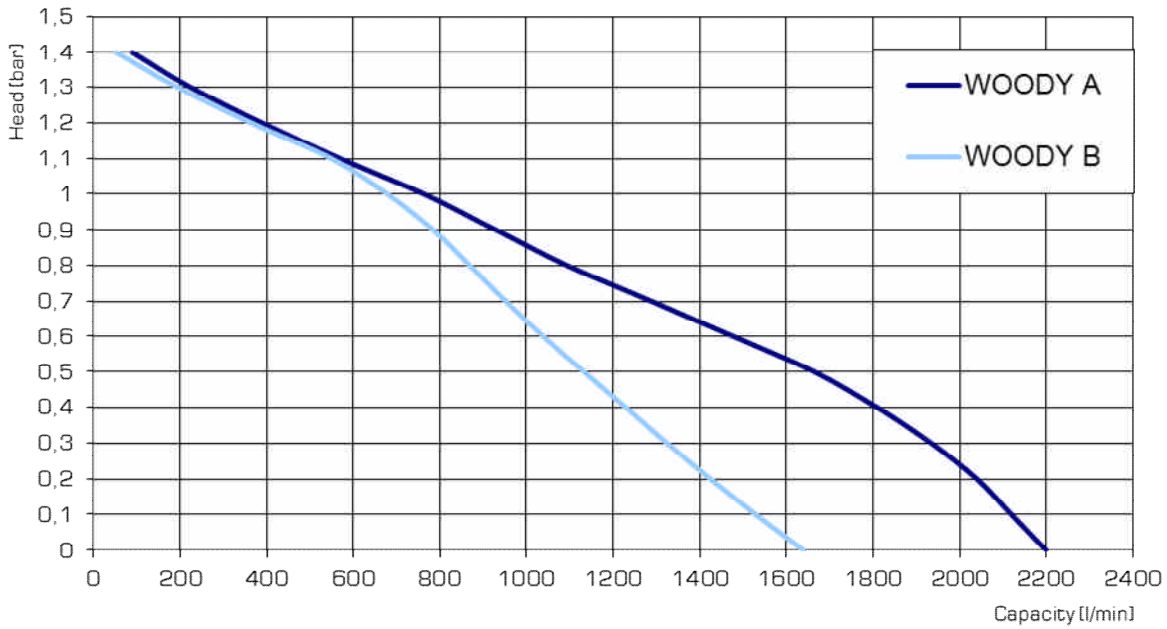
3.2 Electrical data

Type	WOODY A	WOODY B
Voltage:	400 V	
Frequency:	50 Hz	
Protection class:	IP 68	
Rated current:	7,3 A	6,9 A
Electrical power input P1:	3,2 kW	

3.3 Performance

	Head [bar]	0	0,2	0,4	0,6	0,8	1,0	1,2	1,4
WOODY A	**Capacity**	2200	2040	1810	1480	1095	765	390	90
WOODY B	**[l/min]**	1640	1425	1230	1040	870	680	365	53

3.4 Capacity-head table



3.5 Versions

Three versions of WOODY pumps are available:

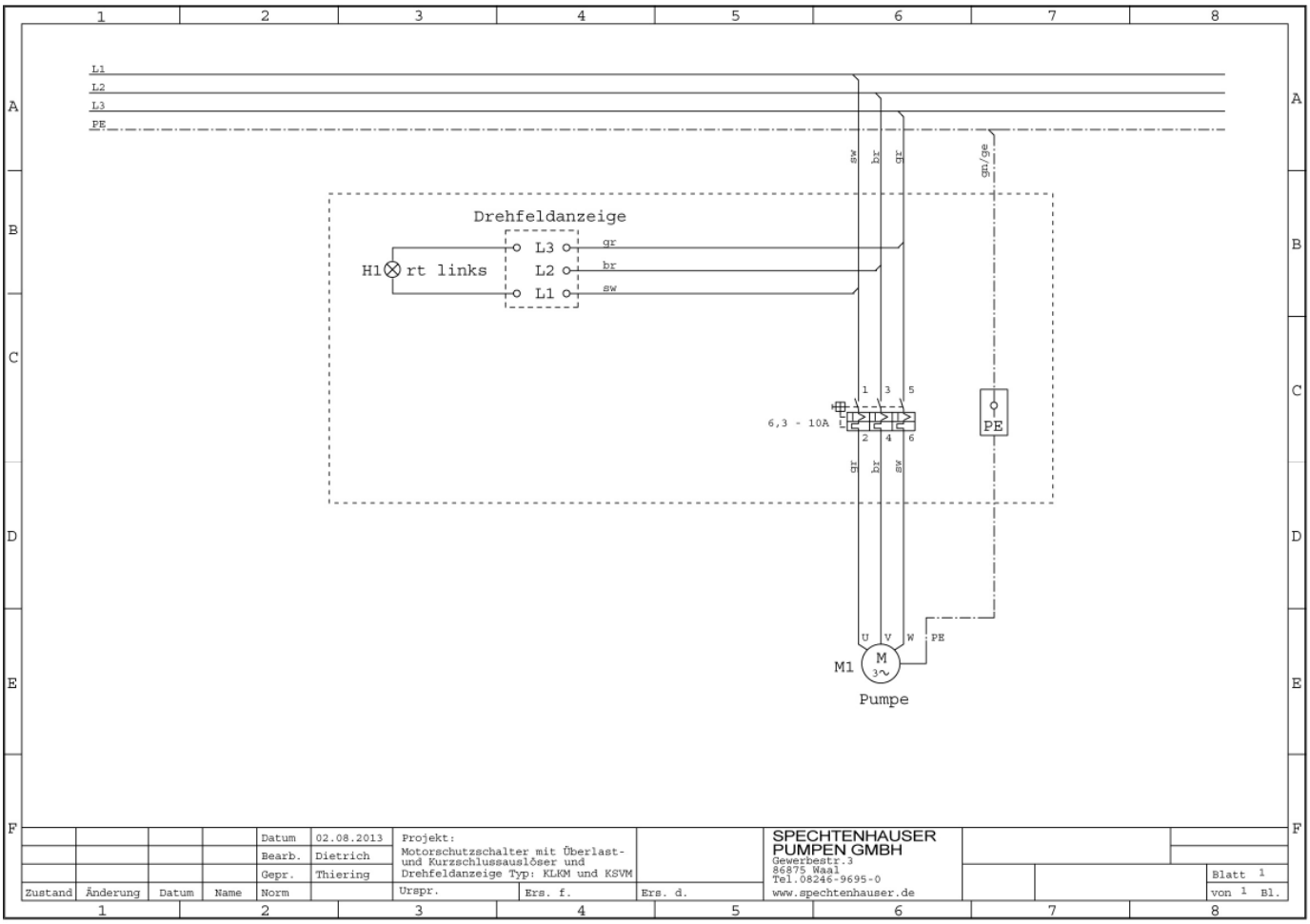
- WOODY: Standard version
- WOODY H: Hot water version, for hot sewage and waste water up to a maximum temperature of 90° C

- WOODY EX: Explosion-proof version, approved for Ex-zones 1 and 2 according directive 94/9/EC

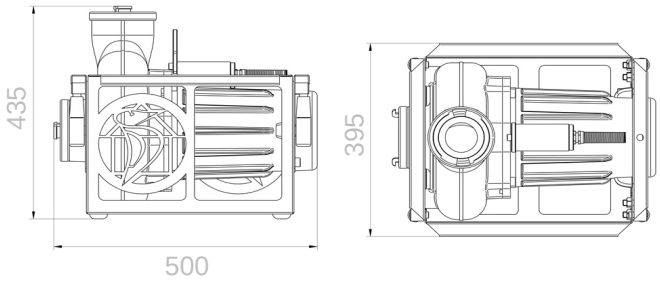
3.6 Construction and materials

- All housing parts made of saltwater-proof aluminium alloy
- All screw connections made of stainless steel
- Impeller made of wear-resistant and self-cleaning aluminium bronze
- Sealing with dry run and endurance run suitable double mechanical seal
- Carrying frame made of stainless steel
- Intake nozzle for WOODY: PE
  Intake nozzle for WOODY H and EX: stainless steel
- Flat intake nozzle for WOODY: PE
  Flat intake nozzle for WOODY H and EX: stainless steel

3.7 Wiring diagram



3.8 Dimensions



4 Operation of the pump

Caution:
The pump may only be operated in compliance with the instructions and information of this operating manual.

Note:
Before starting the pump, check that the supplied voltage and frequency matches the information on the nameplate.

Danger from electric shock:
Bring electrical plug connections to a flood-proof area to protect them from water. Watch out for rising water levels in flood areas!

Caution:
For outdoor use, the provisions of EN 60335-2-41 must be observed.

Danger from electric shock:
No-one should be present inside the pumping medium when the pump is in operation. The pump may only be operated over FI-secured (residual current circuit breaker) CEE sockets.

Important:
The operating personnel must ensure that no third parties (e.g. spectators during demonstrations, residents affected by floods, voluntary helpers, curious onlookers, etc.) can stand in the pumped fluid and can never get into the area of the pump intake (suction side) or pump outlet (pressure side)

Note:
Under no circumstances should the pump be lowered to the mains cable or the connected hoses.

Note:
If kept dry the pump can be stored down to a minimum temperature of –20°C. The flooded pump must not freeze.

4.1 Explanation of the standard motor protection plug

With the exception of pumps with the optional integrated float switches and WOODY EX, all versions of the WOODY are fitted with the standard motor protection plug (see Image 1). Point 4.7 of this operating manual is to be observed with pumps which are fitted with float switches. Point 4.10 of this operating manual is to be observed with WOODY EX.

Before the standard motor protection plug is inserted into an FI-secured safety socket for operation of the pump, it is to be ensured that the red push-button on the motor protection plug is pressed, in order to rule out accidental starting of the pump.

Image 1: 400 V Standard motor protection plug

Red control lamp
If the red control lamp "Falsche Phasenlage" (wrong phase position) lights up when inserting the motor protection plug, the rotating field has to be changed. Remove the plug from the socket and turn the reversing contact on the motor protection switch using an appropriate screwdriver. Never modify the socket for this purpose! Insert the motor

protection plug into the socket again. The red light "wrong phase position" should no longer be lit.

Green push-button
To start the pump, the green push-button on the motor protection switch is to be pressed.

Red push-button
To switch off the pump, the red push-button on the motor protection plug is to be pressed.

4.2 Operating the pump

For safe working on and with the pump, the wearing of safety shoes and safety gloves is recommended, in order to prevent injury from crushing or cutting.

Each time when using the pump, also ensure the following points:

1. Transport the pump to the place of use.

Caution:
Always transport the pump with the handles provided for this purpose only.

2. Mount the intake nozzle (handle protection) with the opening upwards on the coupling on the inlet side of the pump (see Image 2). This avoids the suction of stones or other hard objects from the ground. On the other hand, a sufficient water level remains in this way, in order to carry out low-level pumping after shutting off the pump without additional filling of the pump.

Image 2: WOODY with mounted intake nozzle

Caution:
Before operating the pump, check that the impeller can move freely only when the pump is switched off and the power supply disconnected.

Danger:
The PE intake nozzles (WOODY H/WOODY EX: stainless steel nozzle) on the inlet side are used to protect the impeller from contact. The pumps themselves may not be operated without the appropriate contact protection.

3. Mount a dimensionally stable spiral pressure hose with matching coupling (A-or B-Storz) to the outlet side of the pump. A suitable fire hose can now be connected to this spiral hose. Lay this at a suitable drain or collection tank. The end of the pressure hose must be adequately secured against impact. The fire hose should be laid without kinks where possible to achieve an optimum pumping power. It is strongly recommended that you use the optional dimensionally stable spiral pressure hose for the first 3 m.

Danger:
Ensure that the pressure hose end is adequately secured and fixed. Otherwise, there is the risk of the hose end being hit when switching on the pump.

4. If the pump is to be lowered into a shaft, attach a suitable length of rope to the eyelet provided for this purpose.

Caution:
To lower the pump only the designated abseiling eyelet is used. Under no circumstances should the pump be lowered to the mains cable or the connected hoses.

5. Lower the pump on this rope into the liquid.

Danger from suspended loads:
When lowering the pump, ensure that no-one is under the pump in the shaft.

6. Make sure that the pump is standing safely.

7. Ensure that the pump is switched off. To do this, the red push-button on the motor protection plug has to be pressed. Insert the motor protection plug into an FI-secured residual current circuit breaker) CEE socket.

Danger from electric shock:
Ensure that the network socket at the network socket connection is dry. Never carry out changes on the plug! The plug must be FI-secured (residual current circuit breaker).

8. Now check the phase position. If the red light "phase control" on the motor protection plug is lit, the rotating field has to be changed. Remove the plug from the socket and turn the reversing contact on the motor protection switch using an appropriate screwdriver. Never modify the socket for this purpose! Insert the motor protection plug into the socket again. The red light "wrong phase position" should no longer be lit.

9. Switch the pump on by pressing the green power button on the motor protection plug. The pump should now pump with the defined pumping performance.

10. Switch the pump off again by pressing the red button, as soon as the water level has sunk so far that the pump is taking in air.

11. Clean the pump with clear water after each use, particularly after using it with muddy liquid. In addition, let the pump run for about 10 minutes in a basin with clean water. The pump is to then be completely emptied.

4.3 Series connection of WOODY pumps

To achieve pumping heights of over 15 m, series connection of WOODY pumps is possible. With this, the pressure side of the first WOODY is connected to the next WOODY over a dimensionally flexible hose.

4.4 Low-level pumping

In normal operation, the liquid is pumped to the top of the intake nozzle. The pump then intakes air and the pumping flow breaks off. To pump fluids up to a residual water level of a few millimetres, the flat intake nozzle has to be mounted to the suction-side fixed coupling (see Image 2a).

Caution WOODY H:
In case of high fluid temperatures of >80°C cavitation might arise during low-level pumping. In this case the fluid has to be cooled with cold water.

If low-level pumping is to be carried out, the following points are to be observed:

1. Pump the medium according to section 4.2 of this user manual without flat intake nozzle (with the intake nozzle facing upwards) until the pump intakes air.

2. Now switch the pump off and remove the motor protection plug. Secure the pump against restarting.

Danger from electric shock:
Only carry out work on the pump when the pump is disconnected from the network by removing the motor protection plug from the power supply. Prevent accidental restart of the pump by taking appropriate measures.

3. Now mount the flat intake nozzle to the suction-side fixed coupling. Use a coupling spanner for this. Turn the curve clockwise until it is vertical and facing downwards (i.e. up to the limit stop). Ensure that no stones or other hard objects, such as pond foils, can be taken in!

4. Now plug the motor protection plug into the socket again and switch the pump on again.

5. If the flat intake nozzle gets stuck on solids, first turn off the pump, then pull the motor protection plug and remove the solids from the intake nozzle.

6. Pump the liquid until the pump intakes air. Switch the pump off again.

As the intake nozzle reach until about 1 cm above the ground, it is possible that there are still floating solids in this gap. For this reason, only use the low-level pumping device of the pump for draining residual water.

Image 2a: WOODY with flat intake nozzle

4.5 Low-level pumping at low water level

With help of the glove trick, the pump can also be started at a low water level (< 20 cm). For this pull a disposable glove (AIDS glove, latex glove) over the flat intake nozzle of the pump and mount the flat intake nozzle to the suction-side fixed coupling, as described under 4.4. Fill the pump with water. The disposable glove is used as a "flap valve" and keeps the water in the pump. When starting the pump, the disposable glove tears and the pump starts its low-level pumping operation.

4.6 WOODY in suction operation

By using the non-return valve, which is available as a Spechtenhauser accessory, with a transparent hose (length up to 5 m) suction operation of the pump is also possible. All couplings used on the suction side must be clean and leak-proof. As soon as air is able to enter the system on the suction side, pumping is no longer possible. Basically suction operation can only be carried out up to a maximum fluid temperature of 40°C.

Image 2b: Non-return flap

Important:
The non-return valve may only be supported in an upright position, as a horizontal bearing can result in leaking at the non-return valve.

If the pump is to be used in suction mode, the following points are to be observed:

1. Mount the non-return flap to the transparent suction hose.

Caution:
Only the non-return flap from Spechtenhauser is to be used. Suction operation with ball flap valves is not possible. Only use a transparent suction hose as a suction hose.

2. Connect the suction hose to the suction side of the pump.

3. Fasten a spiral hose to the outlet side of the pump.

4. Pour water into this pressure hose only until the suction hose, the pump and the pressure hose are filled with water. If necessary, the flap of the non-return flap valve will also have to be opened for ventilation.

Important:
The non-return valve must be loaded with at least 1.5 m water column so that it is completely watertight.

5. Lay the suction hose in the medium to be pumped. Ensure that the flap valve is not on the ground, but is about 20 cm above the ground. This prevents stones from being pumped.

6. Lay the pressure hose properly (see section 4.2).

7. Switch on the pump.

4.7 Use of the pump with float switch

Caution:
Pumps which are operated with float switches must not be used in potentially explosive areas. The float switch itself must not be placed in the potentially explosive areas.

When operating the pump with float switches, also note points listed under section 4.2. The following is also to be observed:

1. Mount the float switch on the cable lug in such a way that it cannot be sucked by the pump.

2. The float switch must only hang in the medium to the extent that it switches off shortly before the pump sucks air at the latest.

3. The position of the float weight on the network cable of the float switch may not be changed.

4.7.1 Operation with pluggable float switch

To operate the pump with a pluggable float circuit (see Image 3a), first insert the pluggable circuit into an FI-secured socket and then connect the motor protection plug to the circuit intermateable float circuit. When operating the pump with pluggable float circuits, also note the points listed under section 4.2.

Image 3a: Pluggable float switch

4.8 Operation with emergency power generator

All WOODY pumps can be operated with 5 kVA emergency power generators. In the case of 5 kVA units wherever possible the pump should be connected to the unit directly (i.e. without an extension cable), as otherwise there is a risk of the unit stalling on switching on the pump.
Extension cables can be used for units with a larger output. The extension cables used must have a conductor cross-section of at least 2.5 mm² or larger, in order to keep the voltage drop in the cable as low as possible.

4.9 Operating the WOODY H hot water pump

Danger due to hot water:
With hot water pumps, there is always the risk of endangering involved persons due to hot, spraying water. WOODY H is therefore fitted with a lockable Storz coupling on the pressure side to prevent accidental opening of the coupling during pumping. Always ensure, therefore, that the pressure hose is properly locked.

Danger due to hot pump components:
When pumping hot media, the pump also becomes very hot. In this case, only touch the pump with suitable protective gloves. Never cool a hot pump with cold water. This causes high tension in the material and can also damage the pump.

Risk of burns:
Please ensure that all parts which come into contact with hot water are able to show the corresponding temperature. This also applies to the hoses which are used. Lay the hoses so that no persons or objects are endangered from hot, spraying water. Heat-resistant hoses must also be used.
Moreover, when decoupling the hoses after the pump procedure, ensure that there is no more hot water in the hoses, as there is also an increased risk of burning for the operating personnel.

Caution:
The discharge of hot liquids into the sewer system has to be clarified in advance with the relevant authorities.

4.10 Operating the WOODY EX explosion protected pump

4.10.1 Explosion protection

WOODY EX has the explosion designation Ⓔx II2G Ex d IIB T4. Broken down, this designation means:

Ⓔx Symbol for explosion protected equipment
II: Equipment group II means that the equipment may only be used above ground.
2: Equipment category: Equipment category 2 enables the use of the pump in explosion zones 1 and 2, but not in explosion zone 0.
G: Type of hazard, here G is for gas.
Ex: Designation for explosion protected equipment
d: Type of ignition protection, in this case for pressure-tight enclosure, i.e. if sparks or explosions arise inside the motor, the pressure-tight enclosure prevents these from penetrating to the outside.
IIB: Explosion group, here IIB, through this, the pump is suitable for applications which need the explosion group I, IIB and IIA. However, the equipment must not be used in applications which require the explosion group IIC.
T4: Temperature class: T4 means that the surface of the pump or pump parts never reach a temperature of 130 C. In this way, the pump can be used in all areas where the ignition temperature of ambient gas or liquid is above 130 C, i.e. in the temperature categories T1 to T4.

Also see the following table:

Explosion class	**Temperature classes**					
	T1	**T2**	**T3**	**T4**	**T5**	**T6**
I	Methane		-	-	-	-
IIA	Acetone Acetane Ethyl acetate Ethyl chloride Ammonia Benzene Acetic acid Kohlenoxid Methanol Naphtaline Phenol Propane Toluene	Ethyl alcohol i-Amyl acetate n-butane n-butyl alcohol Cyclohexanone 1, 2-Dichloro-ethane Acetic anhydride	Benzines Diesel fuels Fuel oil n-Hexane	Acetaldehyde		
IIB	Town gas	Ethyl alcohol Ethylene Ethylen oxide	Hydrogen sulfide	Ethyl ester	-	-
IIC	Hydrogen	Acetylene	-	-	-	Carbon disulfide

(This table describes the operating limits and / or explosion approval). The chemical resistance of the pump to the substances listed here is not always given.)

4.10.2 Motor protection plug of WOODY EX

Caution:
All WOODY EX pumps are fitted with a motor protection plug which is different to a standard motor protection plug (see image 4). However, the WOODY EX motor protection plug is not explosion protected. For this reason, the plug may only be operated on FI-secured CEE sockets outside the explosion zone.

Caution:
The float switch which can be mounted on the motor protection switch must not be used in potentially explosive areas. The float switch may only be used if the pump is operated outside the potentially explosive area. The rocker switch **2** must be set to “manual“ if the pump is used in the potentially explosive area. The float switch itself must not be placed in the potentially explosive area. As the float switch may not be used in the potentially explosive area, the pump must be continuously monitored by operating staff if this is run in the potentially explosive area, so that the pump does not run dry.

4.10.3 Description of the motor protection plug WOODY EX

Before the WOODY EX motor protection plug is inserted in an FI protective CEE socket for operating the pump, ensure that the rocker switch **1** on the motor protection plug is set to “OFF” in order to rule out the possibility of accidental starting of the pump. Should the pump be run with the optional float switch, the float switch is to first be fitted to the motor protection switch (see arrow). The switch **2** is to then be set to position “autom.”. Should the pump be run without the float switch, switch **2** must be pressed to position ”manual”.

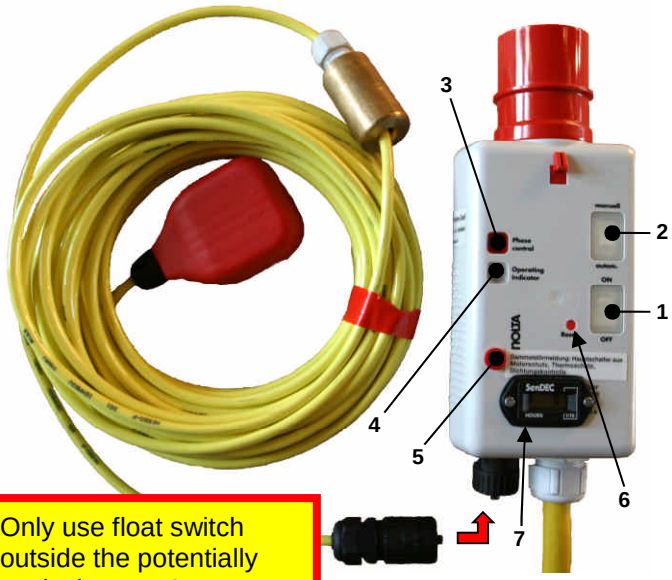


Image 4: Float switch motor protection plug

3 Pilot light “Phase control“
If the pilot light **3** “Phase control“ lights up when the motor protection plug is inserted, the pump is rotating in the wrong direction. To set the correct rotational direction, the mains plug must be removed from the socket, and the **reversing contact on the mains plug** turned with a suitable screwdriver. **Never tamper with the socket for this purpose.** Now insert the network plug back into the socet. The pilot light **3** “Phase control“ should now no longer be lit.

4 Pilot light “Operating indicator“
A lit pilot light **4** “Operating indicator” shows that the pump is running.

5 Pilot light “Error message“
If the pilot light on the mains plug **5** “Error message“ light up, the motor protection has been triggered and the pump was automatically shut down. The motor protection can be initiated due to the following reasons:

- Excess current
- Excess motor temperature
- Leakage

6 Reset button
To start the pump after the motor protection has been initiated, press the reset button **6** on the mains plug with a pen or similar object. If the pump does not start after pressing the reset button **6**, the pump is either blocked (for this, see point 7 Problems/Faults in the

operating manual) or the motor protection has initiated due to excess motor temperature or leakage. In this case, the motor is to first be cooled down. After cooling down, the electronics can be reset by pressing the on/off rocker switch, and the pump can be restarted. The pilot light **5** should go out and the pump should resume its operations. If the motor protection is initiated again following restart, please refer to section 7 Problems/Faults in the user manual and, if necessary, contact Spechtenhauser Customer Service.

7 Operating hours counter
The operating hours counter **7** displays the total operating time of the pump. To guarantee explosion protection, a factory service is to be carried out on Ex pumps following either 2,000 operating hours or no later than 5 years after date of purchase, in which all explosion-relevant components are checked. Should the permissible operating time of 2,000 hours be exceeded, the Ex approval of the pump becomes void. The pump can, however, still be used in non-potentially explosive areas.

4.10.4 Operation with the float switch

Caution:
The float switch which can be fitted to the motor protection switch may not be used in the potentially explosive area. The float switch may only be used if the pump is run outside the potentially explosive area.

If the pump on the rocker switch **2** of the motor protection plug is set to the position “autom.“, it can switched on by setting the rocker switch **1** to “ON”, and operated by using the float switch. When operating the pump with float switches, also note points listed under section 4.2. The following is also to be observed:

1. Mount the float switch on the cable lug in such a way that it cannot be sucked by the pump.
2. The float switch must only hang in the medium to the extent that it switches off shortly before the pump sucks air at the latest.
3. The position of the float weight on the network cable of the float switch may not be changed.

4.10.5 Using the WOODY EX

When using EX pumps in explosion areas, the provisions from BGR 132 are to be complied with.

Caution:
In the explosion area, the pump must only be operated with EX spiral hoses, which meet the requirements of the EC Directive 94/9/EG (ATEX). According to this EC Directive, the hose lines can be used in the areas of equipment group II, category 2. The electrical conductivity meets the requirements of EN 12115, VG 95955 and TRbF 50 Appendix B (TRbF 131/2).

Caution:
The use of metal objects in explosion areas is critical as impact or friction sparks could arise. For this reason, pulling the pump along the ground in explosion areas, for example, is to be avoided.

Caution:
The WOODY EX is generally dry running. If the pump is used in explosion areas, however, the pump must be monitored by operating personnel to ensure that the pump never runs dry in the explosion area.

Caution:
Before operating the pump, check that the impeller can move freely, in order to avoid ignition sparks from forming when starting the pump. Only check this when the pump is switched off and the power supply disconnected. Also secure the pump against accidental restart.

Caution:
However, the WOODY EX motor protection plug is not explosion protected. For this reason, the plug may only be operated on FI-secured CEE sockets outside the explosion zone.

Caution:
In explosion areas, the pump must not be operated with a float switch.

Caution:
When pumping chemically aggressive substances, the chemical resistance of the pump to the pump media is to be checked prior to operation.

4.10.6 Maintenance and repair of the WOODY EX

Caution:
Repairs and maintenance which influence the explosion protection, and special maintenance and repairs on the motor and mains cable may only be carried out by Spechtenhauser Customer Service or at the factory. In case of infringement, the explosion permit becomes void, and all claims for warranty and damages are lost.

5 Accessories

The following accessories are available for the mobile sewage pump WOODY:

- Transport cart
- PVC-spiral hose
- CEE power plug with float switch
- 5 kVA emergency power generator with frequency converter
- Non-return flap wit 5m transparent PVC-spiral hose

In case of further questions please contact your local retailer.

6 Service and Maintenance

It shall be the user's responsibility to ensure that all maintenance, inspection and assembly work is performed by authorized and qualified personnel who have adequately familiarized themselves with the subject matter by studying this manual in detail.
Any work on the machine shall only be performed when it is at stand-still, it is being imperative that the procedure for shutting down the machine described in this manual is be followed.
Pumps and pump units which convey hazardous media must be decontaminated. All waste emissions such as used oil must be appropriately disposed of, oil spills must be cleaned up and emissions to the environment must be reported. On completion of work all safety and protective facilities must be reinstalled and made operative again.

6.1 Pump cleaning and maintenance

Clean the pump with clear water after each use, particularly after using it with muddy liquid. In addition, let the pump run for about 10 minutes in a basin with clean water. The pump is to then be completely emptied.

6.2 Maintenance intervals

WOODY and WOODY H

Both pumps are completely maintenance-free. All components requiring lubrication are lifetime-lubricated. During the annual electrical test in accordance with DIN VDE 0701-0702 a trial run must also be performed to check the functional capability of the pump. In case of vibrations, eccentric pump running or grinding noises a customer service must be carried out in the factory. Also check the seals of the Storz couplings for wear. If the handle protection (intake ports) and the flat suction manifold can be undone without a coupling spanner, the seals on the handle protection/flat suction manifold and intake side of the pump must be replaced. If the handle protection and flat suction manifold can still be undone easily the fixed couplings concerned must be completely replaced.

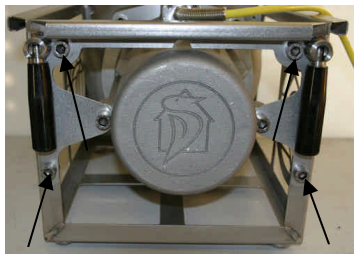
WOODY EX

To be able to guarantee explosion protection, factory customer service is to be carried out on explosion protected pumps after every 2,000 hours of operation or no later than 5 years after the date of purchase, whereby all explosion relevant parts are checked. If the permitted operating time of 2,000 hours is exceeded, the pump's explosion permit becomes void. The pump can, however, still be used in non-explosion areas. Also check the seals of the Storz couplings for wear. If the handle protection (intake ports) and the flat suction manifold can be undone without a coupling spanner, the seals on the handle protection/flat suction manifold and intake side of the pump must be replaced. If the handle protection and flat suction manifold can still be undone easily the fixed couplings concerned must be completely replaced.

6.3 Dismantling the impeller

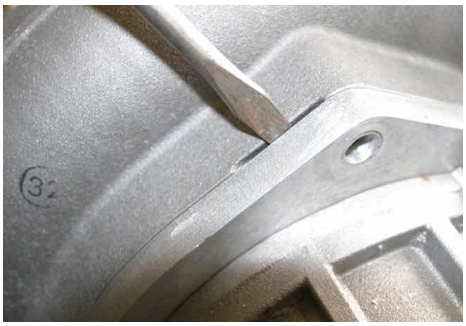
If stubborn blockages form in the spiral housing, the spiral housing and the impeller can be dismantled via the following steps:

1. Unscrew the six M12 cylindrical screws with hexagon socket (see adjacent picture), with which the pump is mounted in the basket. Now remove the pump from the basket.



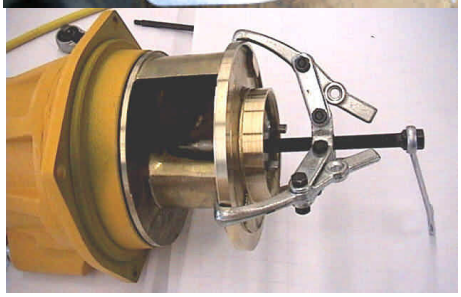
2. Remove the four cylindrical screws with the hexagon socket (M12) on the motor flange from the spiral casing.

3. Remove the spiral casing. With stubborn blockages, it may be necessary to remove the spiral casing with the help of two screwdrivers. To do so, place the screwdriver on the two designated slots on the spiral casing and lift the spiral casing out.



4. Remove the countersunk screw with Torx (M8) from the impeller.

5. For this, use the extraction tool, which is available as a special accessory, to remove the impeller from the shaft. If the impeller is removed from the shaft, the polygon connection has to be cleaned and checked for damage.

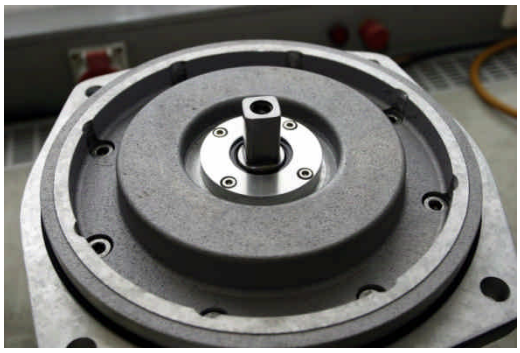


6. Remove the pulled impeller.

6.4 Assembling the impeller

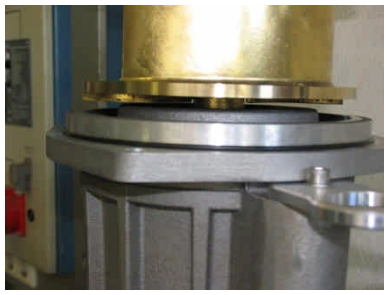
When assembling the impeller, the following steps are to be taken:

1. Ensure that the polygon connection (impeller and shaft) have been cleaned.



2. Evenly place the impeller on the motor shaft and push it down until it stops.

3. The impeller has to be pressed until it stops. (impression depth: 27 mm)



4. Screw the impeller with the motor shaft using the countersunk screw with torx (M8). To fasten the screws, medium-strength bolts are to be used. Please refer to Table 6.3.1 Screw Tightening Torque for the correct screw tightening torque.

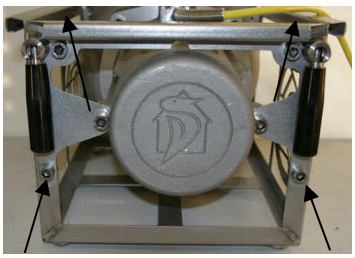
5. Attach the O-ring which is available as a spare part to the motor flange.

6. Place the spiral housing over the impeller mounted on the motor flange.

7. Screw the spiral housing to the motor using four cylindrical screws with hexagon socket (M12). To fasten the screws, medium-strength bolts are to be used. Please refer to Table 6.3.1 Screw Tightening Torque for the correct screw tightening torque.

8. Position the basket above the pump and screw it to the pump using the six cylindrical screws with hexagon socket (M12) (see image). To fasten the screws, medium-strength bolts are to be used.

   Please refer to Table 6.4.1 Screw Tightening Torque for the correct screw tightening torque.



6.4.1 Screw tightening torque

Screw	Screw connection	Tightening torque
M8	Impeller / shaft	34 Nm
M12	Motor / spiral housing	50 Nm
M12	Pump / basket	50 Nm

6.5 Mains cable and motor protection plug

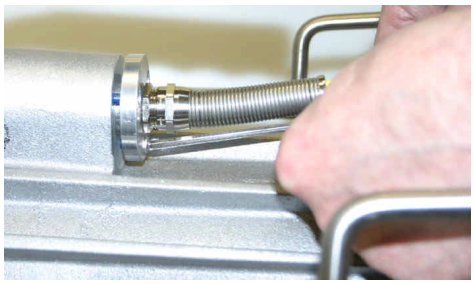
Caution with WOODY EX:
If there is a defective mains cable, the repair may only be carried out by Spechtenhauser Customer Service or at the factory. Any opening of the cable inlet on the pump and of the motor protection plug is not permitted. In case of infringement, the explosion permit becomes void, and all claims for warranty and damages are lost.

With the WOODY and WOODY H, if a cable is defective, the damaged cable can be replaced by a new Spechtenhauser mains cable in just a few steps.

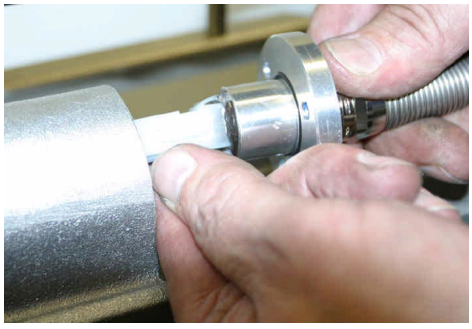
6.5.1 Dismantling the mains cable

Take the following steps for this:

1. Remove the three cylindrical screws with the hexagon sockets (M5) from the housing.



2. Unplug the cable screw and plugs and the coupling from the housing. Open the connection cable plug and unplug the cable from the coupling.



6.5.2 Assembling the network cable

Assembly of the network cable is carried out in the reverse order of disassembly.

6.6 Motor

With all pumps, opening of the motor is not permitted. Repairs and maintenance on the motor may only be carried out by Spechtenhauser Customer Service or at the plant. In case of infringement, all claims for warranty and damages are lost. With EX pumps, the explosion permit also becomes void.

7 Malfunctions; causes and remedy

Problem	Cause	Remedy
Motor does not run	No power supply	Check the fuses, replace if necessary.
		Check the power cable for damage.
	Blown fuses	Replace fuses and locate the reason for their failure
Pump runs but gives no water	Pump blocked by impurities	Clean the pump
	Pressure line blocked	Clean the pressure line
	Air in the pump	Vent the pump and the pressure line. Vent the suction hose and the non-return flap if a non-return flap is used.
Pump gives insufficient water	Pump partly blocked by impurities	Clean the pump.
	Pump head or pressure loss in the system too high.	Use a wider line or a more powerful pump.
	Viscosity of the pumped medium too high	Use a more powerful pump, if necessary
	Incorrect direction of rotation	Reverse the direction of rotation (see section 4.1)
	Pressure line blocked	Clean the pressure line
Motor protection trips out	Power input too high	Check motor protection switch is correctly adjusted (check against type plate).
	Pumped medium too dense	Dilute medium if possible, otherwise cease operation and use another pump
	Viscosity of pumped medium too high	Lower viscosity of medium by heating if possible, otherwise cease operation and use another pump
	Motor running on two phases	Replace defective fuse, or have motor repaired if coil defective
	Pump blocked by impurities	Clean the pump
	Motor temperature is too high	Cool down the motor. If the motor protection is still tripping out the motor has to be checked by the Spechtenhauser service.

In all further questions, please contact our customer service department.

BUREAU VERITAS 1828

BUREAU VERITAS

(1) EC-Type Examination Certificate

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres – **Directive 94/9/EC**

(3) EC Type Examination Certificate Number

EPS 11 ATEX 1 382 X

(4) Equipment: Pump motor Chiemsee EX

(5) Manufacturer: Spechtenhauser Pumpen GmbH

(6) Address: Gewerbestraße 3, D-86875 Waal, Germany

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) Bureau Veritas Consumer Products Services Germany GmbH, Notified Body No. 2004 in accordance with Article 9 of the Council Directive 94/9/EC of March 23rd 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II of the Directive. The examination and test results are recorded in the confidential report 11TH0490.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2009 **EN 60079-1:2007**

(10) If the sign "X" is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

(11) This EC Type Examination Certificate relates only to the design and the construction of the specified equipment in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

(12) The marking of the equipment shall include the following:

II 2G Ex db IIB T4

Certification department of explosion protection

Türkheim, April 04, 2013

D. Zitzmann

Page 1 / 2

Certificates without signature are void. This certificate is allowed to be distributed only if not modified.
Extracts or modifications must be authorized by Bureau Veritas Consumer Products Services Germany GmbH.
This certificate is internally administrated under the following number: 12-077

(13) **Annexe**

(14) **EC Type Examination Certificate EPS 11 ATEX 1 382 X**

(15) Description of equipment:

The pump motor Chiemsee Ex is constructed by an aluminium enclosure in type of protection Ex-d for use in hazardous location zone 1.

Electrical data:

Type	CHIEMSEE A	CHIEMSEE B
Voltage:	400 V	400 V
Frequency:	50 Hz	50 Hz
IP protection:	IP 68	IP 68
Current rating:	7,3 A	6,9 A
Power rating P1:	3,2 kW	3,2 kW

(16) Test report: 11TH0490

(17) Special conditions for safe use:

The repair of flameproof joints is only allowed according to the manufacturers specifications . A repair according to the values of table 1 and 2 of EN 60079-1 is not allowed.

(18) Essential health and safety requirements:

Met by standards.

Certification department of explosion protection

Türkheim, April 04, 2013

D. Zitzmann

Certificates without signature are void. This certificate is allowed to be distributed only if not modified.
Extracts or modifications must be authorized by Bureau Veritas Consumer Products Services Germany GmbH.
This certificate is internally administrated under the following number: 12-077

SHG SPECHTENHAUSER HOCHWASSER- UND GEWÄSSERSCHUTZ GMBH
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Tel.: +49 (0)8246.9695-20
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www.spechtenhauser.de
shg@spechtenhauser.de

Certificate

Standard **Directive 94/9/EC**

Certificate Registr. No. **01 220 061761**

The Certification Body for Explosion Protection
of TÜV Rheinland Industrie Service GmbH
Reported under no. 0035
certifies:

Certificate Holder: **Spechtenhauser Pumpen GmbH**
Gewerbestraße 3
86875 Waal
Germany

Scope: Production, final equipment inspection and testing of explosion protected pumps

Types of protection: d

An audit was performed, Report No. 061761. Proof has been furnished that the requirements according to Directive 94/9/EC Annex IV are fulfilled.

The due date for all future audits is 15th of November

Validity: The certificate is valid from 19.12.2012 until 18.12.2015
First certification July 2006

Wuppertal, 03.12.2012

TÜV Rheinland Industrie Service GmbH
Am Grauen Stein, D-51105 Cologne
Dipl.-Ing. Ralf Biegalla

www.tuv.com

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